

20.58c

# green | kids

An environmental magazine for

kids

HELP THE EARTH



THIS CARTOON IS BASED ON A TRUE STORY - ONLY THE NAMES HAVE BEEN CHANGED TO PROTECT THE INNOCENT.

# SPECIAL AGENT S. NIFTY WITH FLAP & WIGGLES



 Ontario

Green Zone is a publication of the Ministry of Environment and Energy produced by the nice people at the

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This handy-dandy little collection of interesting bits of information was printed on paper that was recycled.  
(AND SO IT SHOULD BE!)



Cette publication est disponible en français.

## IN THE CASE OF THE ICKY BLACK BLOB

...or what happens when Special Agent S. Nifty's nose leads him to a very strange smell...



### \* ECO-FACT :

AN AQUIFER IS A BIG RESERVOIR OF UNDERGROUND WATER THAT CAN BE USED BY HUMANS. 2.8 MILLION ONTARIO RESIDENTS RELY ON GROUND WATER AS THEIR ONLY SOURCE OF WATER.

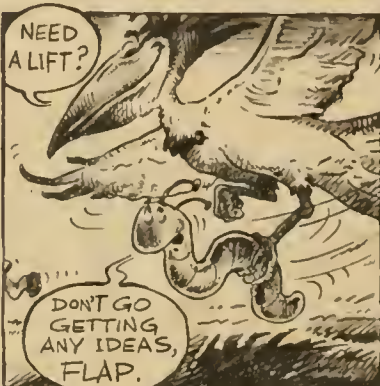
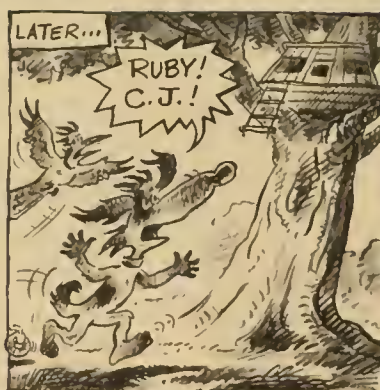
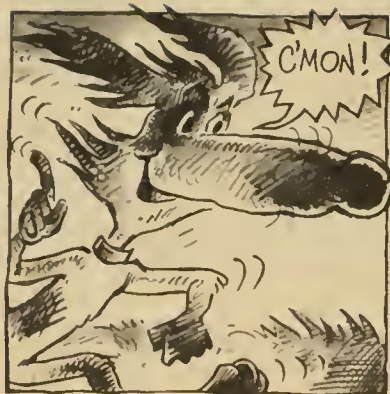
CONTINUED...



**Welcome to the Green Zone...** part of the global neighbourhood where kids like you make a difference. \* You'll learn what's needed to help the environment heal itself while you check out the kind of impact you have on it. \* You'll get to know the frontline people in the race to save endangered species and bring yourself up to

# WELCOME TO GREEN ZONE

speed on the latest issues affecting the quality of our air, land and water. \* And finally, you'll discover that the outlook isn't all gloomy. The millions of individual local actions that combined to damage the environment can be wiped out one by one — by millions of kids like you taking individual local action to put the world to rights.





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## **PAGES 6 AND 7**

**KIDS DID IT!!** (YOU'RE ALWAYS GETTING BLAMED FOR SOMETHIN'!) NO WAIT...THIS IS GOOD STUFF!! See what trees, songbirds and a really cool computer program have in common.

## **PAGES 8 TO 11 TREES ARE LIFE!**

(AND SO ARE THE THINGS THAT DEPEND ON THEM!) A puzzling look at how important trees are whether they're next door or on the next continent.

## **PAGES 12 TO 15 CRUISE CONTROL**

Put down the top, prop up your feet and we'll drive you around some important facts about cars.

**PAGES 16 AND 17 A-MAZING WATER** Splash your way through this maze. You'll have to know a bit about water to stay afloat.

**PAGES 18 TO 21 OUT OF SIGHT, OUT OF MIND** (TRY NOT TO STINK AT THIS QUIZ!!)

**PAGES 22 TO 25 ENDANGERED SPECIES** Find out some amazing things that are being done to save some very special animals.

**PAGES 26 AND 27 LET THE 'R' GAMES BEGIN** The thrill of victory, the agony of defeat, the triumph of competition (AND COOL WAYS TO RECYCLE!!)

**PAGE 28 DESERT DAZE** The heat is on. Can you tell what belongs in the desert ecosystem and what doesn't.

**PAGES 29 AND 30 ECO-ISLAND** Are you a survivor, mon? Find out in this tropical island survival game.

**PAGE 31 BULLETIN BOARD** Answers, info and ways to stay on top of the environmental scene.

**PAGE 32 WHAT IS IT?** Detective Dumpfree leaves a trail of clues.







## Imagine this...

**You type your address into a computer and a map of your neighbourhood pops onto the screen with a flashing arrow pointing at your house. Punch a few keys and presto!**

**You've got all kinds of information about where you live. Here's an idea: you can even isolate all the paved areas around your neighbourhood and map out the perfect in-line skate route. COOL!**

## Sounds like something for the future, doesn't it?

Actually, students in Metro Toronto's East York school board are using this technology right now to study and clean up their local environment. The computer software is called GIS, which stands for Geographical Information System.





Here are some of the things these students are doing to learn more about their environment, and how they're using GIS to help them.

About four years ago students visiting the Parkside Outdoor Education Centre decided to do something good for their community and the planet as a whole. Under the direction of Dennis Hitchmough, an outdoor education teacher at the centre, they began a series of projects to study and help clean

up Toronto's Don Valley. The work they began four years ago continues and now involves all the schools in the East York school board. Here are just a few things that they're doing:

## Trees Please!

The students plant trees in five different locations. They also learn the importance of visiting their trees from time to time to see how they are doing and to take care of them if necessary.

Some students even sing or read to their trees to help them grow.

So how does the GIS help tree planting? Information on the types of trees and where they are planted can be entered into the GIS program. Students can see their trees superimposed over a map of the area. Now they can record their progress, and look for areas that could use more trees and shrubs.

*Thanks to Albert Janzen for providing photographs.*



# Jet-Set Songbirds

Some songbirds spend their winters in Mexico and then fly north in the spring. Three schools in the East York Board have started studying these birds. The trouble is, the birds are only in their area for half the year. No problem! Toronto students write to Mexican students who tell them how their feathered friends are doing. Soon, Mexican kids and Canadian kids will be going on-line so that they can share information at the touch of a button.

*"My favourite songbird is the robin because it symbolizes the beginning of spring."*

— ALLISON BISHOP, AGE 14

Using the GIS, songbird sightings can be entered into the computer. As more information is entered, students begin to recognize common flight patterns and favourite locations of the birds. This information can be combined with the tree planting studies to decide what types of locations and tree species the birds like best.





HOW MANY LIVING THINGS DEPEND ON THIS OAK TREE?



# trees are Life!

*TREES* in  
Northern Ontario are mostly  
pollinated by wind. trees in a  
tropical rainforest are polli-  
nated by animals.

Trees give us shade,  
which keeps us cool  
and protects us  
from the sun's harm-  
ful UV radiation.

THE ROOTS OF TREES HELP  
HOLD SOIL TOGETHER,  
PREVENTING EROSION.

Trees provide  
homes and food for  
countless animals,  
including humans.

Trees give us  
paper, lumber,  
fruits, nuts, syrup  
and even certain  
types of medicine.

## MORE THINGS THAT

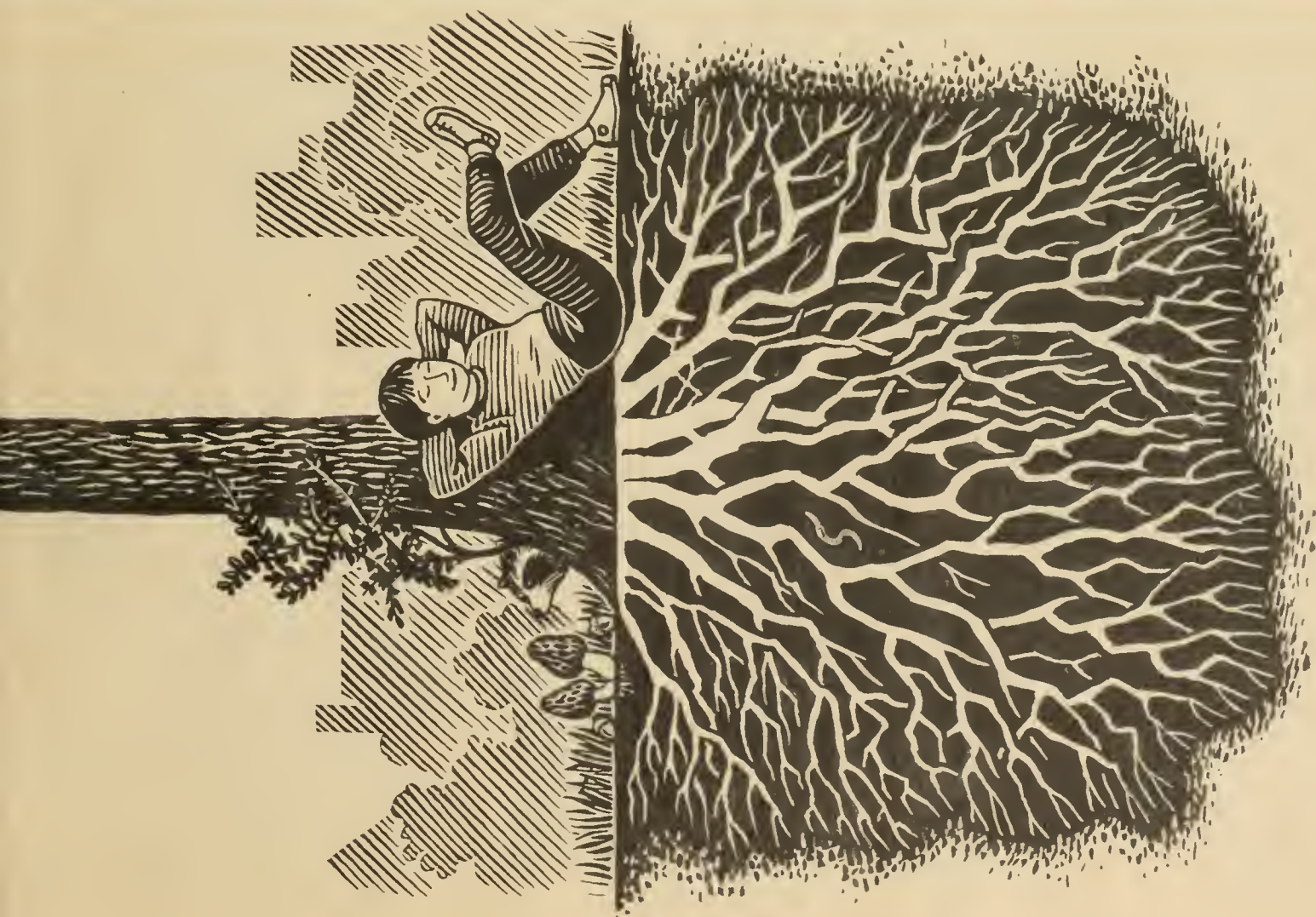
CAN YOU THINK OF SOME

Trees absorb water, and  
release it later through their  
leaves. In the process the  
water gets purified.

TREES DO?

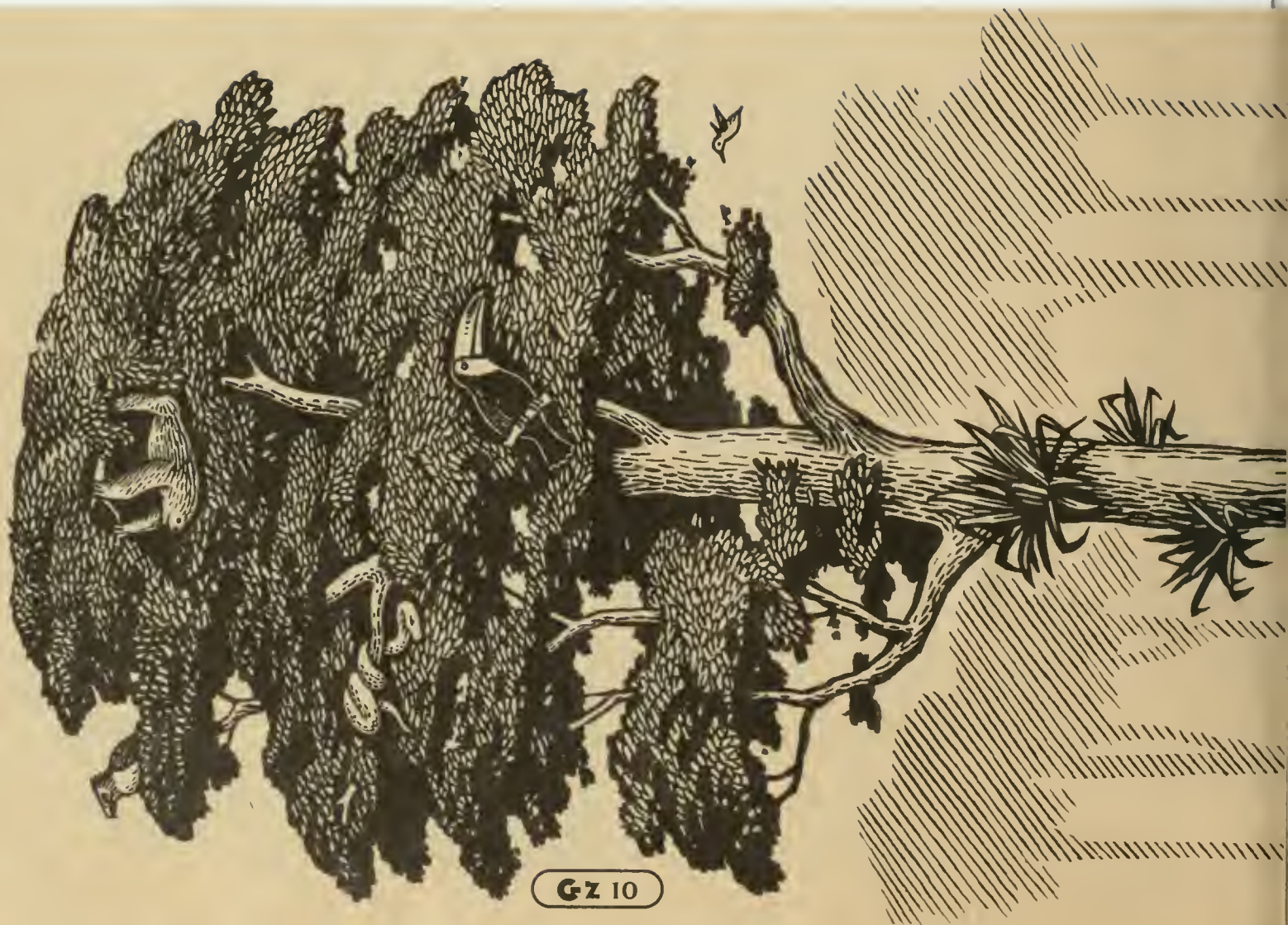


Answers: Raccoon, squirrel, hairy woodpecker, blue jay, morel mushrooms,  
honeysuckle (uses oak as climbing frame), acorns, screech owl, someone resting in the shade, earthworm.

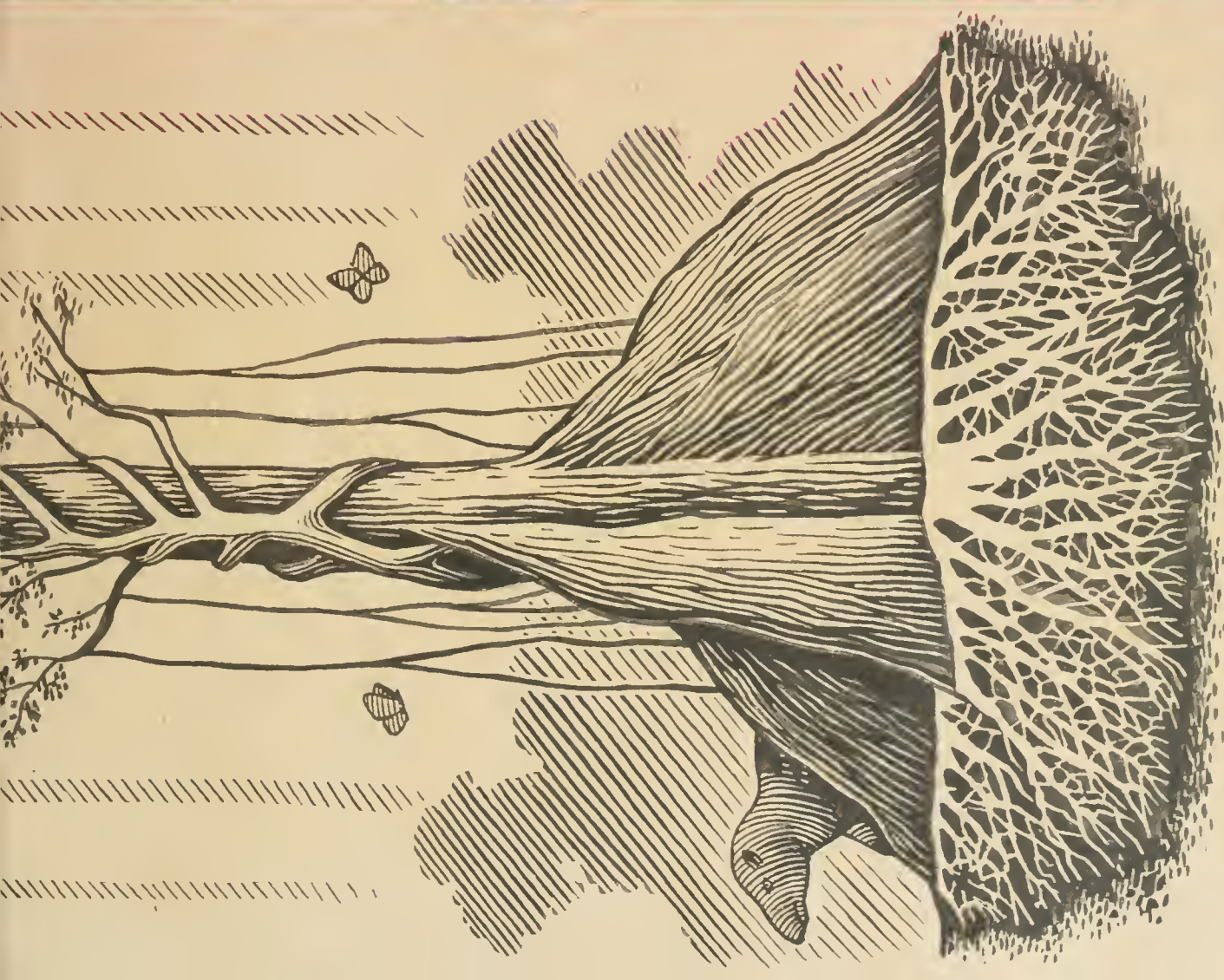




HOW MANY LIVING THINGS DEPEND ON  
THIS RAINFOREST TREE?







Rainforests have four distinct layers; the emergent layer, where the tallest trees poke out, the canopy where the tops of most trees meet and tangle together, the understory, where smaller plants and trees grow, and the forest floor which is mostly made up of leaves and fallen trees. This tree is from the canopy layer, where most life in the rainforest is found. How many living things can you find?

Answers: Three-toed sloth, green tree boa (snake), toucan, hummingbird, harpy eagle, strangler fig, lianas (vines), epiphytes (air plants that grow on tree trunks and branches), blue morpho butterfly, tapir (on ground).

# Did you know?

A mature oak tree can pump up to 4,000 cups of water from its roots to its branches in one day!

Maple trees need cold winters in order to produce leaves in the spring. Global warming could threaten the very tree that gives us our national flag.

The maple leaf is found on Canada's flag. However, many Canadians have never seen maple trees because they are only found in southern Canada.

## Rainforest Cassowary trees and Cassowary birds depend on each other to live.

Cassowary birds eat the tree's large, hard fruit. Only after the Cassowary bird partially digests the fruit and later excretes it, can the seeds germinate. Unfortunately, Australia's Cassowary bird is endangered.

Here's a game you can play with a friend. See who can come up with the biggest list of things that grow on trees. We'll get you started: oranges, apples, bananas, olives, acorns, walnuts, vines, ...

## Canada

Just rainforest, too. Plenty of them and a warm climate provide ideal conditions for the temperate rainforests of Canada's west coast.

### What is it?

I help to reduce one of the following: raspberry jam, toe jam, traffic jams



The world's oldest living thing is a 10,500 year-old Huon Pine tree.

Half of all the world's living things are found in rainforests.

Look for three more Detective Dumpfire clues like this one to solve the mystery on the back cover. For your next clue go to page 16.



# Cruise Control



## Featuring...

- ✓ one third of the world's oil used for motor vehicles
- ✓ a 200 billion kilometre journey — Canadians guzzle enough gas to drive to the sun and back 500 times in one year
- ✓ a troublesome total of 19.5 million tires trashed every year in Canada alone

## What would you buy if you won the lottery?

Most people would include a new car in their list - usually a luxury car or a high performance gas guzzler.

North Americans love cars. They're a part of our daily lives. Cars help us get around and building them provides jobs for many people. However, if we want to get serious about the environment, it's time to start changing the way we look at cars.



**Imagine**  
if city streets  
were turned into  
bicycle paths.  
Cities would  
be cleaner,  
quieter, safer  
and more fun.

**IF IT  
WEREN'T  
FOR  
CARS,**

YOU COULD  
IN-LINE SKATE  
RIGHT ACROSS TOWN.



**People in  
the Dutch  
city of  
Groningen  
use bicycles  
for 48%  
of all trips  
within  
the city.**



**I M A G I N E  
WHAT GREAT  
SHAPE YOU'D  
BE IN IF YOU  
WALKED OR  
JOGGED  
EVERYWHERE  
YOU WENT.**

**Q:**

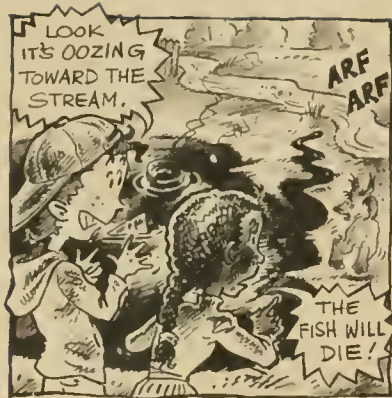
*What if your city  
didn't allow cars?*

In Florence, Italy, traffic is  
banned from the city centre  
during daylight hours.

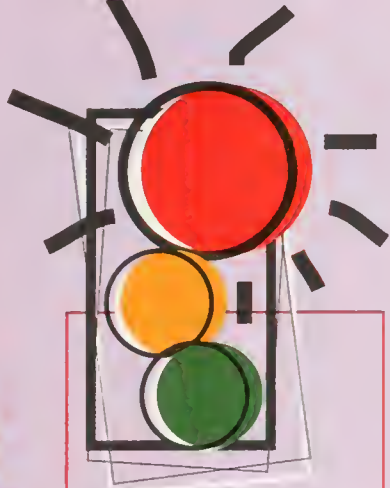
Next time you are in a  
car count how many  
people you see in  
each car that goes by.  
If cars can seat 4-5  
people why are there  
so few passengers?

**WHAT  
SHOULD  
BE DONE?**









## Red Light Alert

### Fume Facts

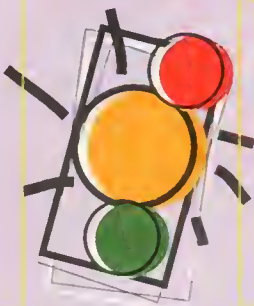
Many things come out of a car's tailpipe including nitrogen oxides (NOx) and volatile organic compounds (VOCs). When mixed with sunlight, NOx and VOCs react to form ground level ozone, the main ingredient in smog. Smog is the yellow brown haze that you sometimes see on hot summer days. Large cities with lots of cars often have dangerously high smog

**WORLD-WIDE, A CAR IS BUILT EVERY SECOND**

levels. Breathing the air in Mexico City has the same effect on your health as smoking two packs of cigarettes a day!

Cars also produce as much as 25% of the world's carbon dioxide (CO<sub>2</sub>) emissions. In fact, in one year, the average car emits its own weight in CO<sub>2</sub>. It takes a tree a whole year to absorb the carbon dioxide released from the burning of 4L of gasoline. The average Canadian car burns 3,300 L of gasoline in a year.

## YELLOW Caution



Do we have room for more cars in our future? Even if we could make a car that runs on garbage and doesn't pollute, cars would still be a problem. Today's cars are cleaner than in the past but they still take up space, cause traffic jams and road accidents and use up precious resources. Building more roads to accommodate more cars

**A WELL TUNED CAR EMITS UP TO 10% LESS CO<sub>2</sub>**

will use up more land and resources. What will happen to all these cars when they are old and no longer wanted? Unless engineers can design a fully recyclable car, we will be faced with more and more waste. We could see 80% recyclable cars in the future. Car companies are working on it now.

Sometimes riding your bike, or even jogging, can be faster than driving a car in a busy city. In Lisbon, Portugal a race was organized between a Porsche and a cart pulled by a donkey. The donkey cart made it across the city four minutes faster than the Porsche!

## Fuels for the Future

Millions of dollars have been spent researching new fuels. Future car fuels may include ethanol, propane, natural gas or even solar energy. One interesting idea involves using solar energy to separate hydrogen from water. The hydrogen could then be used to power the car, with the only exhaust being harmless water vapour.

# Green Light



One solution is to use public transit. If more people took the bus, train, or subway the streets would be less crowded and we'd create less pollution.

Maybe our towns and cities have to be replanned to make it easier for people to use public transit.

Here's another solution that's fun, healthy, free, and clean – why not use your own two legs to get where you want to go. You can ride your bike, in-line skate, walk, jog, skateboard, sail, paddle, or ski.



# A-MAZING WATER!



**START**

HALF THE PESTICIDES AND FERTILIZERS USED ON GARDENS AND FIELDS END UP IN GROUND AND SURFACE WATER.

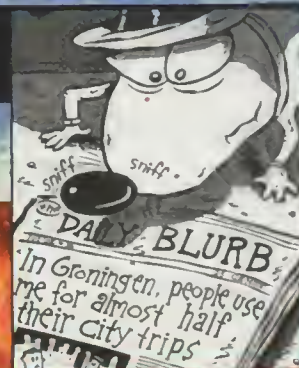
**FALSE!**

**TRUE!**

WATER COVERS 80 PERCENT OF THE EARTH, YET ONLY 1 PERCENT OF IT IS DRINKABLE.

**TRUE!**

**FALSE!**



Detective Dumpfree's Second Clue.  
For the next clue, go to page 20.

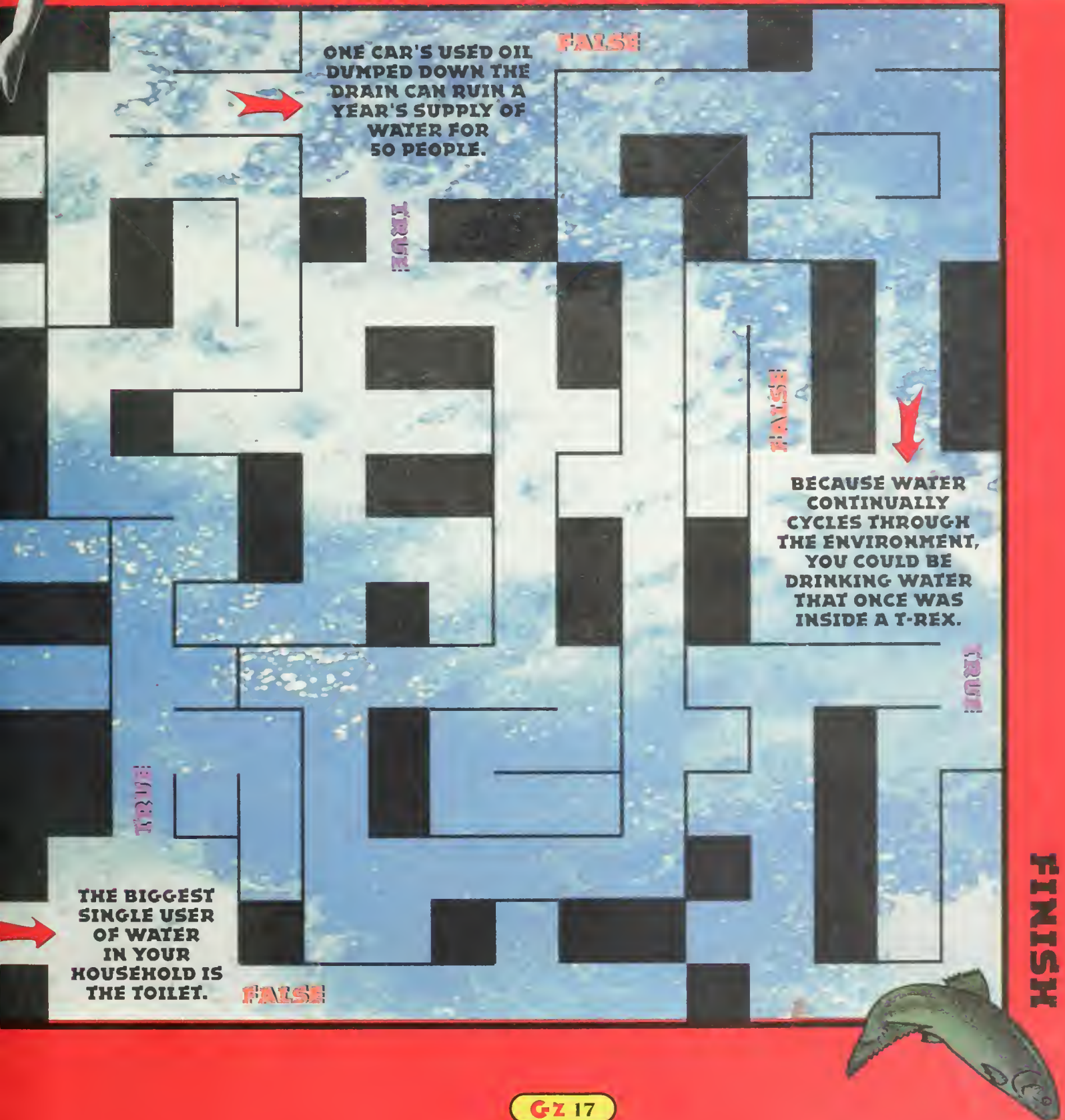
**What is it?**



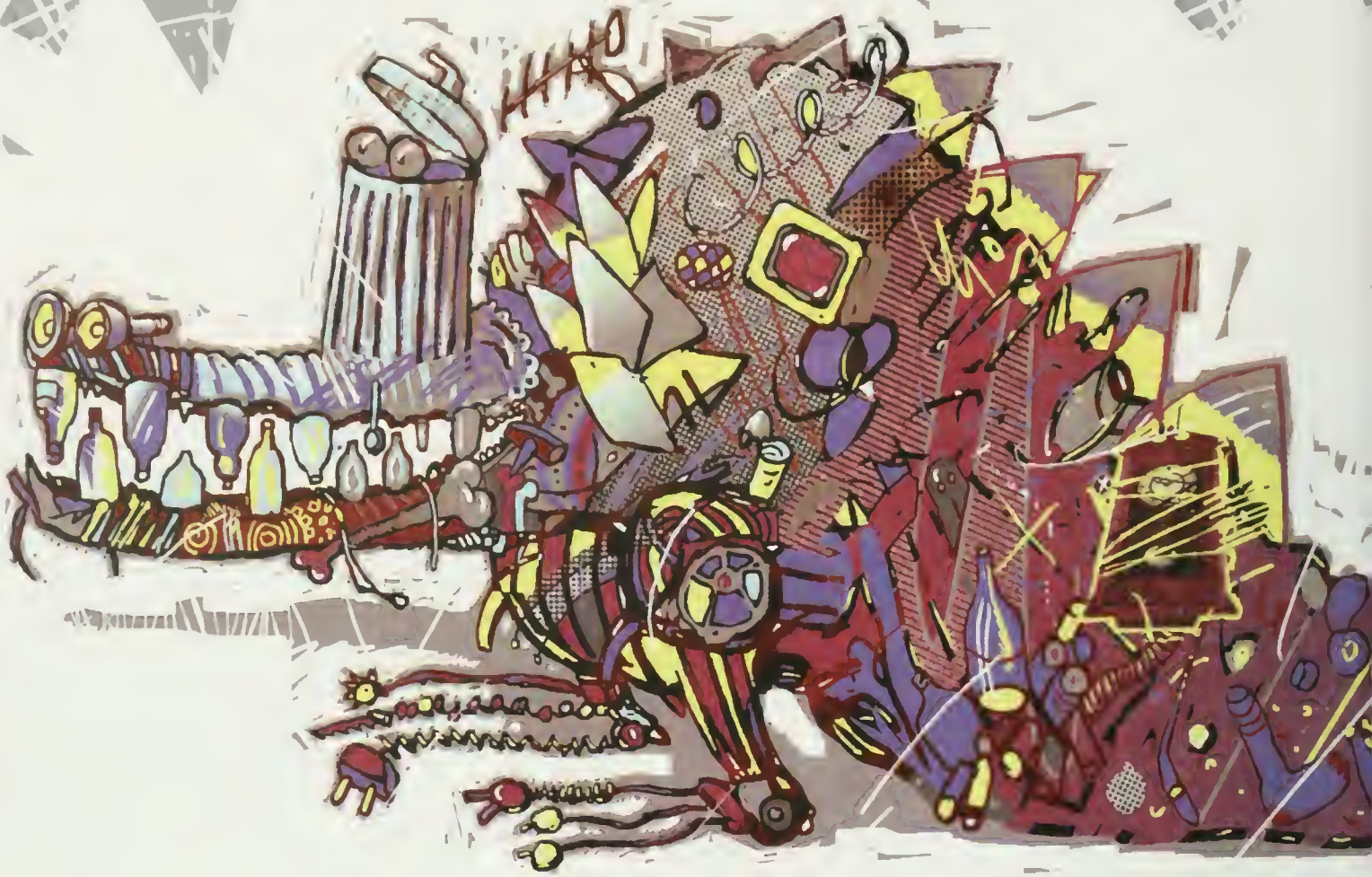


ARE YOU STEAMING HOT OR ONLY  
LUKE-WARM WHEN IT COMES TO  
WATER KNOW-HOW? SPLASH YOUR  
WAY THROUGH THIS TRUE OR FALSE  
MAZE AND FIND OUT. EACH DECISION  
YOU MAKE WILL EITHER PROPEL YOU SAFELY THROUGH THE  
RAPIDS OR RUN YOU AGROUND UP A DEAD END. FASTEN  
YOUR PFD\*. NO GURGLING ALLOWED.

\*PERSONAL FLOTATION DEVICE.







# ONE

**WHAT KINDS OF THINGS SHOULD YOU SAVE FOR HOUSEHOLD HAZARDOUS WASTE COLLECTION DAYS?** **A.** Your old socks and sneakers. **B.** Things like old medicines, leftover paint or thinners, empty aerosol cans, batteries and half-empty pesticide containers. **C.** All the stuff you've shoved under your bed for the last year. ■ **TWO WHY SHOULD YOU NEVER THROW BATTERIES INTO THE GARBAGE?** **A.** When they rot in a landfill site the mercury or cadmium in them can leach into underground water supplies. **B.** Raccoons think they're candies. **C.** They rattle around inside the garbage trucks and annoy the drivers. ■ **THREE WHERE WOULD YOU BE MOST LIKELY TO FIND RED WIGGLERS?** **A.** In your sneakers **B.** At the bottom of the garden **C.** In a vermicomposter (where worms do the composting) ■ **FOUR WHY SHOULD WE MAKE A BIG EFFORT TO REDUCE THE AMOUNT OF GARBAGE WE PRODUCE?** **A.** Many resources are non-renewable. The more we gobble up today, the less we'll have tomorrow. **B.** Whether we burn garbage or bury it, we risk polluting the environment. **C.** Nobody wants a landfill site as a neighbour. ■ **FIVE IF YOU SAW PETE IN THE SUPERMARKET, YOU'D BE LOOKING AT:** **A.** A pop bottle made out of PolyEthylene TErephthalate **B.** A lobby group demanding you use Plastic Every TimE **C.** A food dispenser at which dieters Pay Extra To Eat ■ **SIX HELP! THE WIRE COAT HANGERS ARE MULTIPLYING IN YOUR CLOSET. WHAT DO YOU DO?** **A.** Put a lock on the closet door so they can't escape. **B.** Give them to your local dry cleaner for reuse. **C.** Move to another town. ■ **SEVEN WHICH OF THE FOLLOWING ITEMS SHOULD YOU NOT ADD TO A COMPOSTER?** **A.** Fruit and vegetable peel and coffee grounds **B.** Chicken bones, charcoal and your Aunt Polly's chihuahua **C.** Eggshells, nut shells and tea bags





# LIVING MACHINES

*What are they? What do they do? Where can you see one operating? All is revealed — just turn the page...*





## Nature Does it Best

Aquatics Biologist John Todd became interested in how we clean sewage water after he realized that nature does the job more efficiently. Wetlands are living machines that have been cleaning water for millions of years. How?

When polluted water enters a marsh, bacteria digest organic matter in it, changing harmful chemicals into plant food. Small plants, such as algae, feed on this. These plants, in turn, are eaten by snails and other tiny animals. Meanwhile, fish eat the snails, and larger marsh plants remove toxic materials from the water. Some even produce antibiotics! By the time water has cycled through this food web, it is crystal clear.

### *Where can you see a living machine?*

John Todd designed an indoor version of nature's living sewage treatment machine and the Boyne River Ecology Centre in Shelbourne, Ontario became the first place in Canada to install it. Sewage and waste water from the school pass slowly through four sealed tanks, 17 see-through solar tanks, a marsh and a pond. Along the way the water is purified by an army of bacteria, aquatic worms, snails, fish, algae, other water plants and ultra violet light. If the system passes a year's worth of tests, the school hopes to be able to reuse its water.

## What is it?

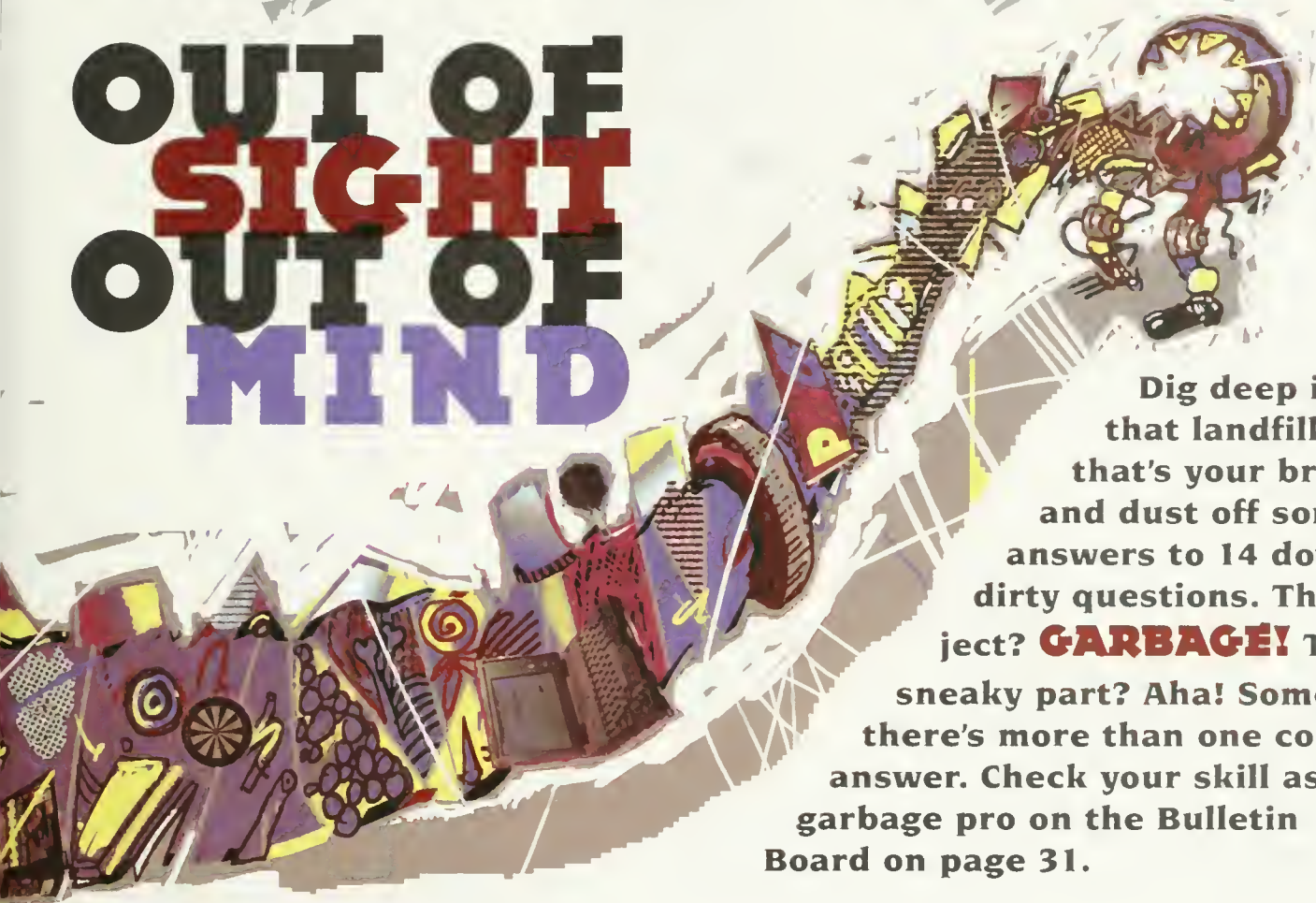
Detective Dumpfree's third clue.

For your final clue go to page 26.





# OUT OF SIGHT OUT OF MIND



Dig deep into that landfill site that's your brain and dust off some answers to 14 downright dirty questions. The subject? **GARBAGE!** The sneaky part? Aha! Sometimes there's more than one correct answer. Check your skill as a garbage pro on the Bulletin Board on page 31.

■ **EIGHT** STATEN ISLAND, N.Y. IS HOME TO FRESHKILLS, AN IMMENSE LANDFILL SITE. BY THE END OF THIS CENTURY FRESHKILLS WILL BE: **A.** Larger than the Great Pyramid of Egypt. **B.** Renamed Rottenkills. **C.** Second only to the Great Wall of China as the world's largest man-made structure. ■ **NINE** NON-REFUNDABLE POP BOTTLES CAN BE RECYCLED INTO: **A.** dog food and drain pipes **B.** skis and shower stalls **C.** picnic tables and pig pens ■ **TEN** WHAT DO SEWERS, ASPHALT DRIVEWAYS AND REFLECTIVE PAINT ALL HAVE IN COMMON? **A.** They all sound the same whether you read them backwards or forwards. **B.** They all smell worse on a hot afternoon. **C.** They can all contain recycled glass. ■ **ELEVEN** WHAT IS HAZARDOUS WASTE? **A.** The garbage bin your dad tripped over in the dark. **B.** The mistake your dog made on the dining room carpet. **C.** Any waste that's dangerous to your health and the environment because it's corrosive, flammable, explosive, or toxic. ■ **TWELVE** WHEN GARBAGE ROT'S IN A LANDFILL SITE, IT PRODUCES LANDFILL GAS, WHICH: **A.** Is explosive. **B.** Contributes to global warming. **C.** Kills flies and rats. ■ **THIRTEEN** IF YOU COME ACROSS AMBUSH, ASSASSIN AND PIRATE BUGS IN YOUR GARDEN, WHAT SHOULD YOU DO? **A.** Throw a party — they're all beneficial bugs that do naturally what pesticides do, but without harming the environment. **B.** Close all the doors and windows and stay home from school. **C.** Call the police. ■ **FOURTEEN** THE 1 BILLION USED TIRES STORED IN DUMPS ACROSS CANADA CAN POLLUTE OUR AIR, SOIL AND WATER IF THEY CATCH ON FIRE. HOW CAN YOUR FAMILY MAKE THE TIRES ON ITS CAR LAST AS LONG AS POSSIBLE? **A.** Check tire pressure and wheel alignment regularly. **B.** Drive smoothly, avoiding sudden stops, starts and turns. **C.** Take public transit, walk or ride a bike as often as possible.

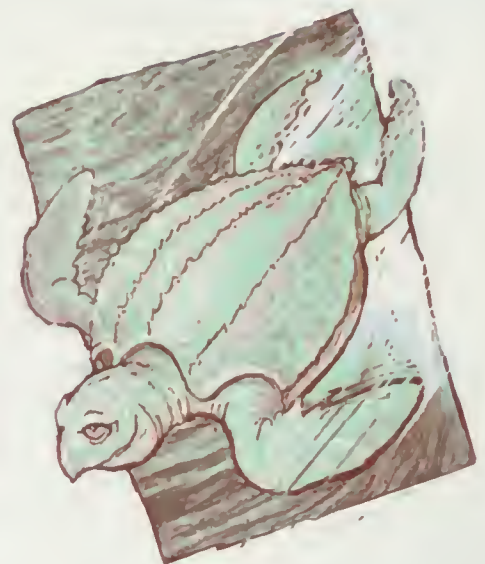




St. Lawrence Beluga



Peregrine Falcon



Leatherback Turtle

# WHAT'S THE MIX UP?



Eastern Cougar

**These** animals are endangered. Why? They'd tell you themselves only someone mixed up what they had to say! Can you figure out two reasons why each animal is endangered by deciding who's saying what? Write the correct numbers in the spaces provided.

1

It's tough finding living space with all you people around. But I'm making a comeback — in cities!

2

I wish that my eggs and I weren't so delicious to eat!

3

When you build dams, bridges and marinas, fish can't breed and I go hungry.

4

Thanks to a pesticide called DDT, my eggshells broke when I sat on them.

5

How can a big pussycat like me scare people so much they want to hunt me?

6

When does a plastic bag look like my dinner? When it looks like a jellyfish in the ocean!

7

After the settlers came farms, roads, cities and factories. No wonder I ran out of places to live.

8

I love grubbing around in mud, eating worms, fish and shrimps. How did I know they've been poisoned by toxic waste?



# How to Fool a Toad



Until recently, endangered Puerto Rican Crested Toads didn't breed in captivity. Then, Bob Johnston at the Metro Toronto Zoo reproduced their breeding conditions so well that the toads are now producing large quantities of toadlets.

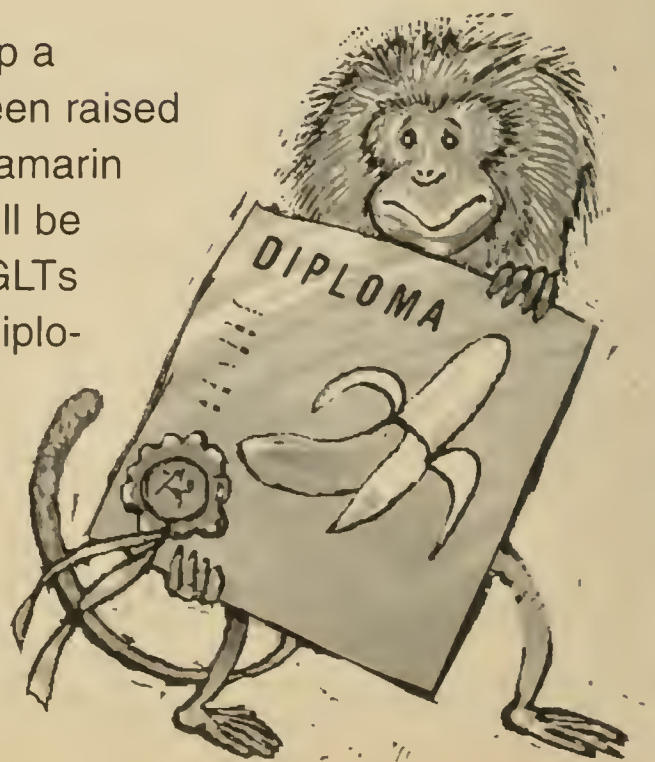
What turns these rare toads on? First, you have to starve them, let their living quarters dry out completely over a month, then raise the temperature. Finally, you have to tilt their breeding tank and simulate a rainstorm for precisely four days while you fill the air with recordings of toad mating calls.

After all that, what self-respecting toad wouldn't feel in the mood for love?



# A School for Monkeys

What kind of monkey doesn't know how to unzip a banana or feel at home in a tree? One that's been raised in captivity — like the endangered golden lion tamarin bred by staff at Washington's National Zoo. You'll be happy to know that, thanks to careful training, GLTs are being released into Brazil's rainforest with diplomas in how to eat bananas, how not to fall out of trees, and how to avoid eating poisonous berries. The other good news is that many of the released GLTs are producing babies. And guess what? They don't need humans to teach them anything!





# people do the Weirdest things

*Especially when they're*

*wildlife biologists who are*

*trying to save animals*

*from extinction...*



## Who's Fooling Who?

The Muppet look won't fool you, but this Peregrine Falcon chick thinks that's mom providing dinner. It's essential that a chick raised by humans recognizes its own species. Why? Because then it will know what its future mate will look like!

## Why raise birds in captivity at all?

In the wild, peregrines lay about six eggs each year...not enough to keep the population growing in the face of DDT poisoning. So in 1970, a Canadian biologist called Richard Fyfe began breeding 12 Peregrines in captivity. By removing eggs from the nest as soon as they were laid — and hatching them in an incubator where their thin shells couldn't be crushed — Fyfe was able to trick each female peregrine into laying as many as 15 eggs!

## So far, so good...

But what happens next? Biologists become rock climbers, that's what! Peregrines nest on cliff ledges. So over the edge of the cliff goes the biologist with one of two things: either young chicks, which they slip into the nests of wild Peregrines, or a hack box containing much older chicks.

## WILD HACKERS

A hack box is a haven for Peregrines ready to learn how to fly and hunt. It's installed high on a cliff and biologists drop food into it through a tube until the Peregrines can hunt for themselves.

Wild Peregrines learn hunting techniques from their parents. Hack box Peregrines learn by trial and error.

## CITY HACKERS

Not all biologists enjoy the rock climbing approach to work. Luckily for them, Peregrines can also learn to fly and hunt from the top of tall buildings. Today, Peregrines are being released successfully from hack boxes in cities throughout North America.



# LET THE 'R' GAMES BEGIN!



## YOU'LL NEED:

- two straws, one fat and one thin
- scissors • sticky tape

1. Cut the fat straw in half and make one end of it airtight by taping over it.
  2. Slide this half of the fat straw over the thin straw.
  3. Blow through the thin straw. Zazoom!
- Make a circle on the ground and see whose Zazoomer can get closest to its centre.

## YOU'LL NEED:

- a used, fat drinking straw
- a paper clip
- used paper (magazine, writing or wrapping paper)
- sticky tape



1. Cut two strips of paper, 21 cm x 2 cm.
2. Clip the paper clip to one end of the straw (this becomes the front of the plane).
3. Make loops out of the paper strips and tape them to the straw, as shown.

FIRST EVENT  
ZOOMING

NOISE MAKING

SECOND EVENT  
GLIDING



## YOU'LL NEED:

- corrugated cardboard (from a box)
- a sharp knife (get permission to use it) and a ruler
- used wrapping paper (it must be strong)
- sticky tape

1. Cut a cardboard square 30 cm x 30 cm and a paper triangle 36 cm x 36 cm x 51 cm.
2. Use the ruler and knife to score diagonally across the cardboard. (To score corrugated cardboard, only cut through one of its layers.)
3. Lay the cardboard, scored side up, on top of the paper, as shown.
4. Fold the edges of the paper over the cardboard and tape them down very securely.
5. Fold the cardboard in half along the score line so that the paper folds inside it.

Hold a contest to see who can make the loudest BAM. Hint: Hold the Whammer-Bammer high above your head and fling down your arm as hard as you can. Can you find ways to change the sounds you make?

YELLOW WARNING LIGHT:

KEEP YOUR WHAMMER-BAMMER AWAY FROM EARS  
AND CATS. IT'S L-O-U-D!



## What is it?

### Detective Dumpfree's Fourth Clue

Don't just spin your wheels!  
Solve the mystery of the back cover. NOW!

FOURTH EVENT



## CURB THAT CRAZY URGE TO THROW USEFUL STUFF AWAY! WELCOME TO THE GAMES OF THE MODERN RECYCLING AGE.



4. Launch your plane by releasing it as if it were a dart. The paper clip end should be forward and the loops up.

How far can you make it glide? What happens if you change the size or thickness of the loops?

### YOU'LL NEED:

- a shoebox • magazines and scissors • two or more players
1. Cut at least 20 pictures out of the magazines.
  2. Put them in the box and put the lid on. Shake them up.
  3. The first player — no peeking — takes a picture out of the box and makes up a story about it.
  4. When the first player runs out of story, the second player picks out a different picture and builds it into the story.
  5. The game continues until all the pictures are used up or everyone's brain is scrambled, whichever comes first.



### YOU'LL NEED:

- newspapers (make sure everyone's read them first)
- scissors and sticky tape

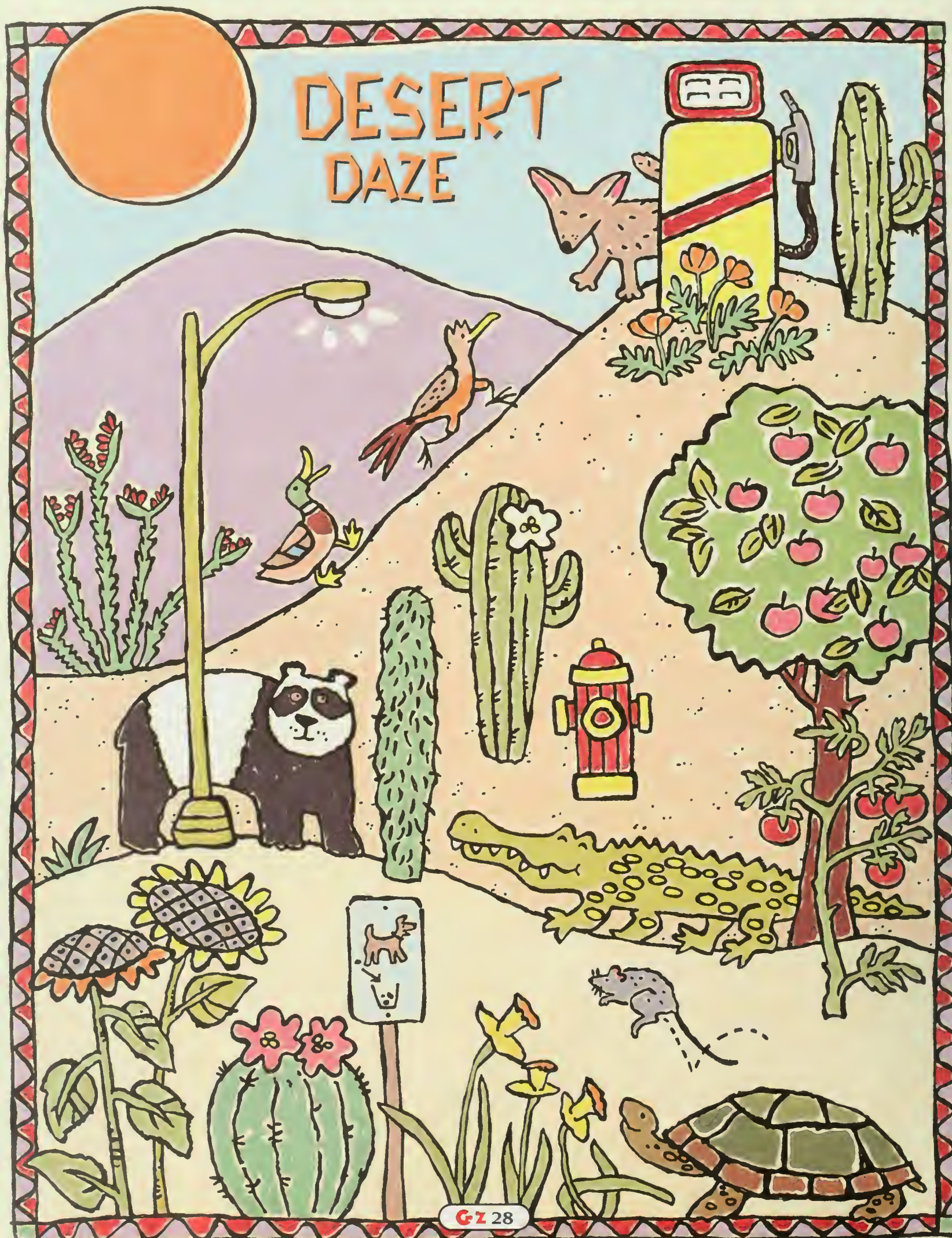
1. Open up three sheets of newspaper and lay them in a row, with their short sides touching. Overlap the short sides, as shown.
2. Starting at a short side, roll up the newspapers into a tube. Don't make it too tight.
3. Tap the end of the tube to even up the papers then make three cuts about 15 cm long into one end, as shown.
4. Holding the uncut end of the roll in one hand, grasp one or two of the cut pieces with your other hand and gently pull and twist on them until you've pulled a tree out of the roll!
5. When you've made the tree as tall as possible, tape the uncut end of the roll so that your tree doesn't unravel.

How high can you stretch your tree before it — or you — collapses in a heap? How can you add to the tree's height?





There's something strange going on around here! Not all the animals and things are as much at home in a desert ecosystem as they'd like you to believe. Can you sort out what doesn't belong here and why?








# ECO-ISLAND SURVIVAL GAME

The challenge: You've been stranded on a tropical island. To survive you will need shelter, fresh drinking water, food, fire for cooking and warmth, and tools to help you build a shelter and hunt for food. You might also want to plan for a way to be rescued, or to make short journeys away from the island. Here's the catch: .....



# THE ISLAND'S ECOSYSTEM IS DELICATELY BALANCED.



If you interfere too much with the island's natural environment you will destroy the resources you need to survive. Therefore, you must find the right balance between your needs and the island's needs. Try to find a reason for everything you do. For example, where will you build your shelter? Why? If you cut down trees, which ones will they be? Why? Where will you go to the washroom? Why? Remember, you need the island more than it needs you.

## HERE'S A LIST OF WHAT'S ON THE ISLAND

※ several hundred coconut palms ※ 200 other types of palm trees ※ 46 fruit trees: 20 banana, with large, thick leaves, 20 mango, 2 papaya and 4 guava ※ vines hang from many of the trees ※ various edible roots ※ 6 species of birds (30 of each) ※ 20 bird's nests (10 with eggs) ※ 30 large, edible lizards ※ 15 different kinds of insects including bees and tasty grubs ※ a fresh water spring ※ the island's highest point (100 m) is bare rock ※ a sand beach runs around the island with a few stones and rocks ※ a glass bottle on the beach ※ a large supply of driftwood ※ many large and colourful shells ※ fresh seaweed on the beach ※ a coral reef 500 metres from shore (home to all kinds of sea food ※ watch out for sharks, poisonous jellyfish, and deadly cone shells)

**GOOD LUCK**, and be thankful we didn't leave you stranded in the **ARCTIC!**



# BULLETIN BOARD

## Yellow Fish Road

Last year, kids in Sault Ste Marie painted 3,413 bright yellow fish next to city sewers. They were part of a program called the Yellow Fish Road Project which is meant to remind people that sewers lead into lakes and rivers. If hazardous materials are poured down the drain and sewer, fish and other wildlife can be harmed. Check the sewers where you live to see if they have yellow fish painted by them. If not, you may want to ask your teacher or your parents about getting a Yellow Fish Road program started in your community.

## High-Tech Toads

A group of high school students are rebuilding transmitters to track American toads. They plan to study the toads' behaviour and learn more about why their population changes from year to year. Get this! Students in home economics classes have sewn miniature knap sacks to carry the transmitters on the toads' backs!!

## Environmental Awards

If someone you know is doing something special about the environment, why not nominate them for an environmental award? YTV's achievement awards have an environmental category. You can call YTV at 534-1191 for information.

OWL Magazine's HOOT Awards also recognize kids who are helping the environment. You can get information by writing to: HOOT Awards Programs, c/o OWL Magazine, 179 John Street, Suite 500, Toronto, Ontario M5T 3G5.

## Are You Wired?

If you have access to a computer that's connected to Internet, you can discover all kinds of environmental information on the Great Lakes basin through GLIMR — Environment Canada's Great Lakes Information Management Resource. It's user friendly — just point your mouse and click — and will be a great help with school projects. The EcoDek at Toronto's CN Tower now has a display that shows you how to get into and around GLIMR.

**GLIMR's address is:**  
<http://www.cciw.ca/glimr/intro.html>

## Answer to Desert Daze page 28

The plants and animals at the top of the picture, reading from left to right are: 1. ocotillo plant, 2. mallard duck, 3. roadrunner, 4. kit fox, 5. California poppies, 6. saguara cactus. Of these, only the mallard duck couldn't survive in the desert. The ocotillo looks dead but sprouts leaves after a heavy rain; the roadrunner runs all the competition out of town to protect its food supply; the kit fox loses heat through its extra-large ears; the poppies survive as

seeds in the ground until there's a heavy rain, they then flower and produce more seeds in record time; and the saguara cactus closes its pores during the day to prevent moisture loss.

The plants and animals in the centre of the picture, reading from left to right are: 7. panda, 8. senita cactus, 9. saguara cactus, 10. crocodile, 11. apple tree, 12. tomato plant. Of these, only the two cacti belong in a desert. The senita's whiskers shade it from the sun. All the other plants and animals either need too much water or eat food that can't grow in a desert.

The plants and animals at the bottom of the picture, reading from left to right are: 13. sunflowers, 14. barrel cactus, 15. daffodils, 16. kangaroo rat, 17. desert tortoise. Of these, only the sunflowers and daffodils can't survive in a desert. The barrel cactus soaks up water like a sponge; the kangaroo rat has kidneys that can recycle water from food over and over again; the desert tortoise stores water in small "tanks" under its shell. There isn't enough water available in a desert for sunflowers and daffodils.

And did you also find the gas pump, street lamp, fire hydrant and Stoop and Scoop sign?



## Answer to "What is it?"

Yup!! It's a chain ring of a bicycle.





**WHAT IS IT?**



**WHAT IS IT? WHAT IS IT? WHAT IS IT?**



To find out what this close-up belongs to, follow Dumpfree to page 11 for your first clue.